



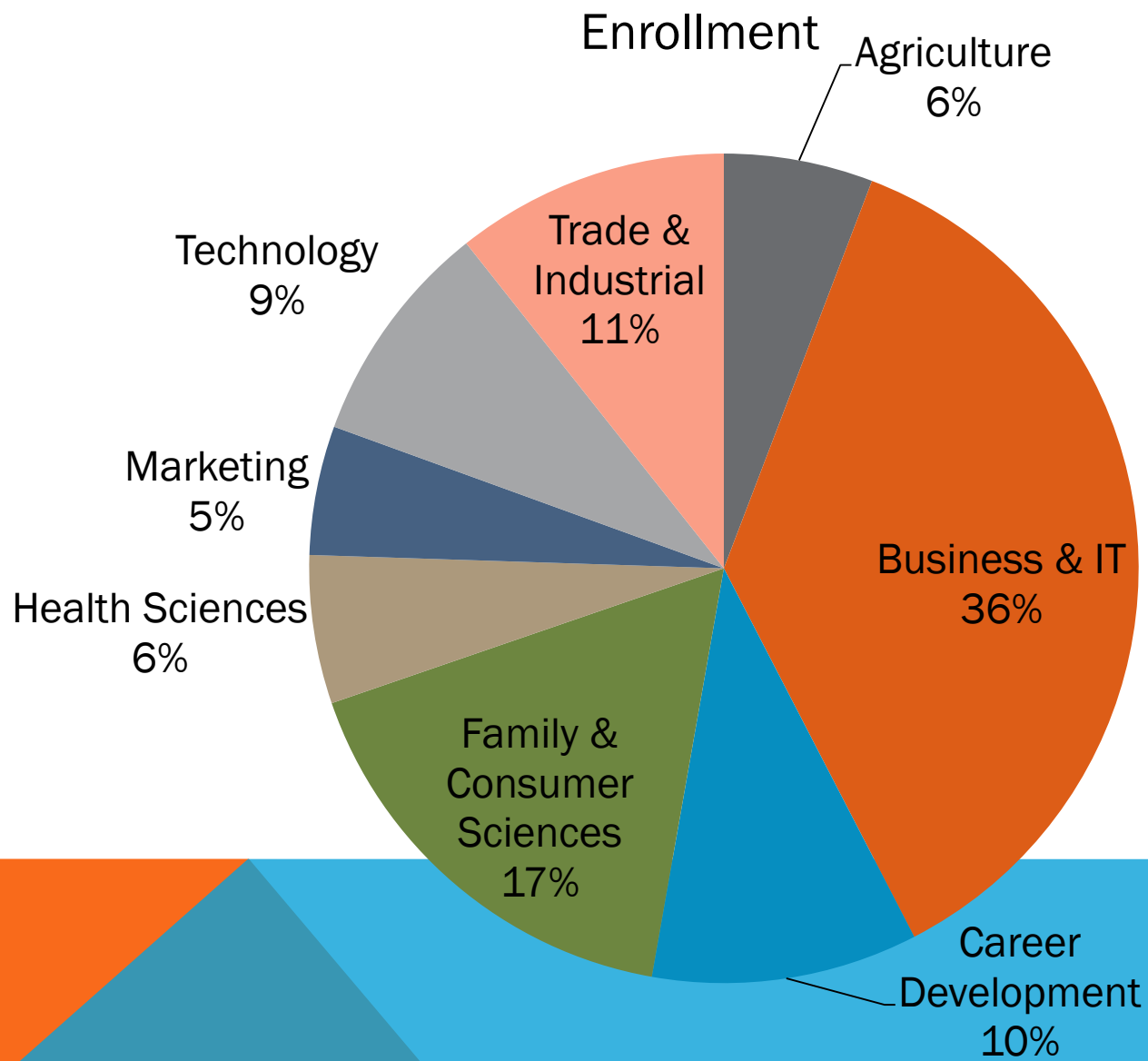
Learning that works  
for North Carolina

# CAREER AND TECHNICAL EDUCATION

SEPTEMBER 27, 2012

# CTE Enrollment

804,850 Enrollments in 2010-2011



# HISTORICAL PERSPECTIVE

## ACADEMIC TRACK

Courses that meet requirements for entry into UNC System

- High levels of math
  - Algebra I
  - Geometry
  - Algebra II
  - Fourth math such as calculus
- Foreign language
- Advanced Placement courses

## VOCATIONAL TRACK

Courses that meet requirement for entry level jobs

- Minimum math
  - Algebra I
- At least 4 vocational credits
- Few opportunities for Advanced Placement or post-secondary credits

# INTEGRATED ACADEMIC AND TECHNICAL CONTENT

## **Courses the meet the UNC System admission requirements**

- Algebra I, Geometry, Algebra II, and a 4<sup>th</sup> math that aligns with the students post-secondary plans

## **Foreign Language**

## **Post-secondary credit opportunities**

- Advanced Placement courses
- Career and College Promise courses

## **Concentrated study in a CTE cluster area**

- 4 credit concentration in a CTE cluster area
- Industry certification

# IMPORTANCE OF ACADEMIC CONTENT

## Lexile Levels for Popular Literature

1500 - On Ancient Medicine

1400 - The Scarlet Letter

1300 - Brown vs. Board of Ed.

1200 - War and Peace

1100 - Pride and Prejudice

1000 - Black Beauty

900 - Tom Swift in the Land of Wonders

800 - The Adventures of Pinocchio

700 - Bunnicula: A Rabbit Tale of Mystery

600 - A Baby Sister for Frances

500 - The Magic School Bus Inside the Earth

400 - Frog and Toad are Friends

300 - Clifford's Manners

## Lexile Levels for Material in Career Clusters

1280-1330 -Entry level material in the Manufacturing Cluster

1310-1350 – Entry level material in the Construction Cluster.

1280 - A typical medical insurance benefits package

# READING EXAMPLES

## TEXT FROM HIPPA REGULATION

### *Purpose of the Administrative Simplification Regulations*

This regulation has three major purposes: (1) To protect and enhance the rights of consumers by providing them access to their health information and controlling the inappropriate use of that information; (2) to improve the quality of health care in the U.S. by restoring trust in the health care system among consumers, health care professionals, and the multitude of organizations and individuals committed to the delivery of care; and (3) to improve the efficiency and effectiveness of health care delivery by creating a national framework for health privacy protection that builds on efforts by states, health systems, and individual organizations and individuals.

**Lexile Level 1550**

## WELDING HANDBOOK

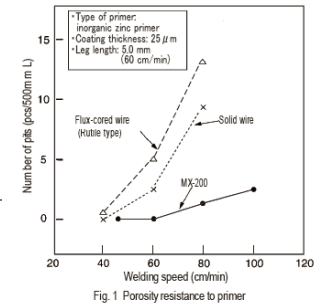
### Types and features of flux-cored wires

There are two types of flux cored wires: DW series rutile type and MX series metal type. Both DW and MX series include a variety of wires that use either CO<sub>2</sub> or Ar-CO<sub>2</sub> admixture shielding gas. The following paragraphs describe essential characteristics of both types of flux-cored wires to provide users with a useful guide.

#### DW series:

DW series is the most popular type of flux-cored wire, most of which contains rutile flux. This series offers excellent weldability with good arc stability and very low spatter generation. With CO<sub>2</sub> or Ar-CO<sub>2</sub> admixture shielding gas, DW wires show good slag removability and smooth, glossy bead appearance. Because of high deposition rates, highly efficient welding can be conducted. DW series includes those suitable for out-of-position welding and those suitable for horizontal fillet welding for a variety of applications.

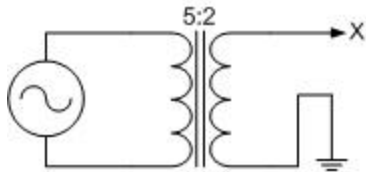
**Lexile Level 1130**



# MATH EXAMPLES:

From Associate Certified Electronics Technician Exam

In the circuit below, what is the voltage output at letter “X”, when input voltage is 25V?



From NCCER Carpentry Curriculum


The number of sheets of plywood sheathing needed for a house 30' long with a span of 20' and  $\frac{1}{4}$  pitch is \_\_\_\_\_. (Assume no overhang.)



# CTE OFFERINGS

CTE Course Offerings are aligned with the 16 National Career Clusters and industry certifications.

DPI currently supports about 175 courses and 14 of the National Clusters. Courses are assigned to Clusters based on a set of nationally vetted knowledge and skill statements.

Pathways	<div><div>CareerClusters<sup>™</sup> PATHWAYS TO COLLEGE &amp; CAREER READINESS</div><h1>Manufacturing</h1></div> <div>Cluster Foundation Courses</div>				Cluster Enhancement Courses
Production	7400 Introduction to Trade and Industrial Education	7621 Cabinetmaking I	7622 Cabinetmaking II * (1 credit)	7623 Cabinetmaking III (1 credit)	6145 Career Management 6414 Multimedia and Webpage Design 6417 Microsoft Word, PowerPoint, & Publisher ^ 6419 Microsoft Excel & Access ^ 6621 Marketing ^ 6831 Agricultural Mechanics I 7921 Drafting I 8716 Entrepreneurship I ^ (BFIT & MEE) 8726 Personal Finance (BFIT, FACS, & MEE) XXXX Microsoft SharePoint ^ 8595 CTE Advanced Studies 8596 CTE Apprenticeship 8597 CTE Internship
		7661 Welding Technology I	7662 Welding Technology II * (1 credit)	7663 Welding Technology III (1 credit)	
		7641 Metals Manufacturing Technology I	7642 Metals Manufacturing Technology II * (2 credits)		
Manufacturing Production Process Development	7621 Cabinetmaking I	8510 Project Management I	8511 Project Management II - Global	8513 Project Management III	
	7661 Welding Technology I				
	7641 Metals Manufacturing Technology I		8512 Project Management II - Technology		
Maintenance, Installation, and Repair	8721 Principles of Business & Finance (BFIT & MEE)	7631 Electronics I ^	7632 Electronics II * ^	7633 Electronics III ^	
Career & College Promise	8598 and 8599 Career & College Promise Career Technical Education Pathway				




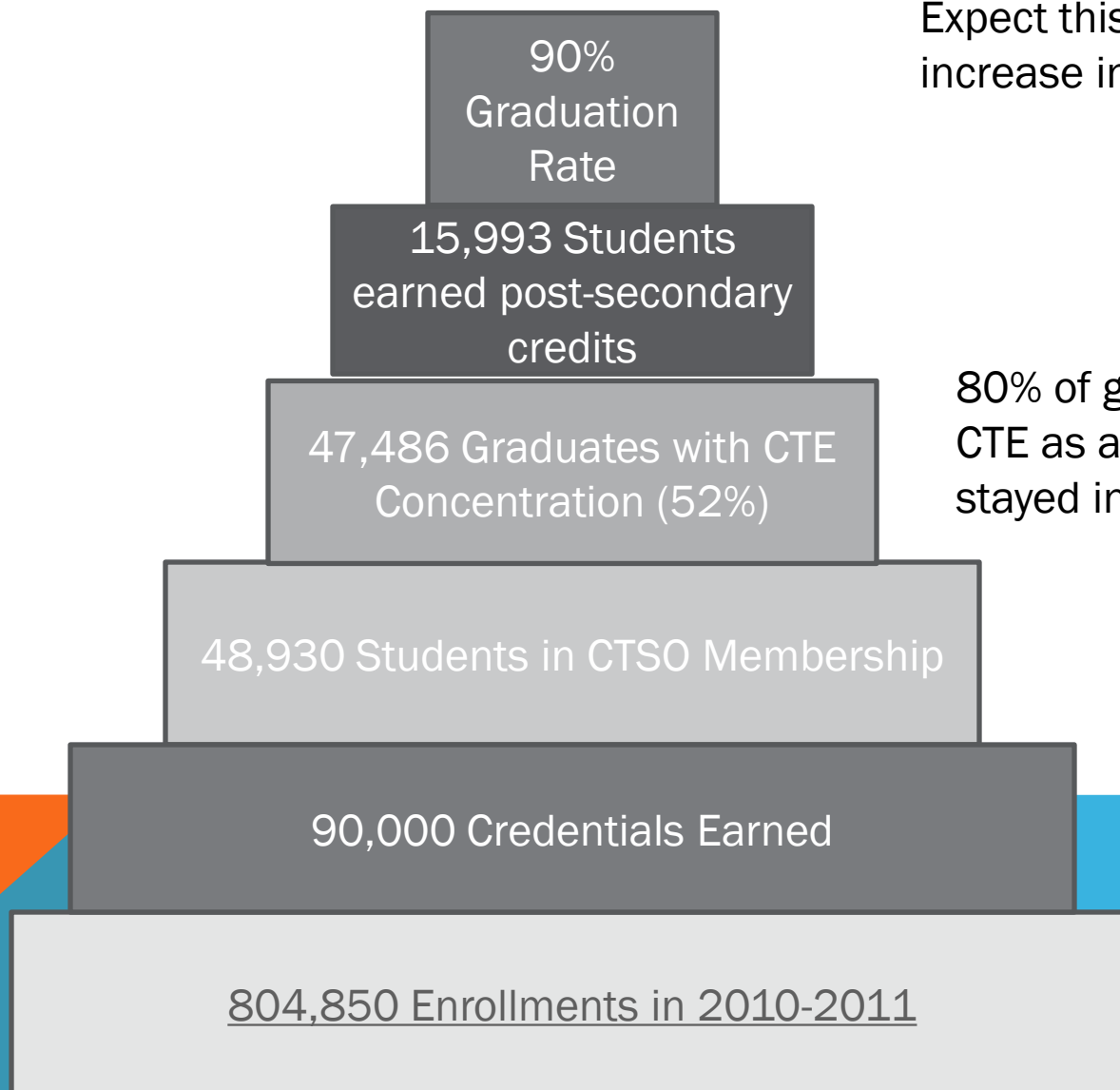
90,000 Credentials Earned

804,850 Enrollments in 2010-2011

# CREDENTIALS

About 90,000 credentials were earned by CTE Students in 2011-2012.

- 50,000 Microsoft Office Specialist
  - 30,000 WorkKeys
  - 6,500 NCCER credentials for construction related courses
  - 2,300 Certified Nurse Aid
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Expect this number to  
increase in 2012 to 92%

80% of graduates reported  
CTE as a main reason they  
stayed in school.

# CAREER AND COLLEGE PROMISE

Career and College Promise has led to greater collaboration with the NC Community College System

- Statewide CTE Articulation Agreement
- Collaboration aligned to Cluster for consistent knowledge and skill building
- Stackable credentials
- CTE Pathways for Career and College Promise student



High School Career Cluster: → → Arts, A/V Technology, and Communications¶  
 Community College Degree Pathway: → Advertising and Graphics Design (A30100) ¶



The Arts, A/V Technology and Communications career cluster is focused in designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.¶

Grade	English	Math	Science	SS	Required or Recommended Electives			
9	English I	Math I	Science	World History	Health/PE	Microsoft IT Word/PP	Digital Media	Advanced Digital Media
10	English II	Math II	Biology	Civics and Economics	e-Commerce I	Microsoft IT Excel/Access	Elective	Elective
11	English III	Math III	Physics	US History I	ART 121 Design I	GRA 151 Computer Graphics I	GRD 142 Graphics Design II	GRA 152 Computer Graphics II
12	English IV	MAT 155/155A Statistical Analysis	e-Commerce II	US History II	GRD 241 Graphics Design III	GRA 153 Computer Graphics III	Project Management	Elective

**Future Ready Core Requirements:**¶

English—4 Units¶  
 Math—4 Units¶  
 Science—3 Units¶  
 Social Studies—3 Units¶  
 Health/PE—1 Unit¶  
 Electives—6 Units¶

**DCCC Credits:**~21 credit hours~

MAT-155/155A(4), ART-121(3), GRA-151(2), GRD-142(4), GRA-152(2), GRD-241(4), and GRA-153(2)¶  
 ¶

**Additional Articulated Credits:**~9 credit hours~

e-Commerce I } WEB-110(3) and WEB-210(3)¶  
 e-Commerce II }  
 Word/PP } CIS-110(3)¶  
 Excel/Access }

Students must meet competency requirements in order to receive college credits.¶

Upon completion of the pathway, the students will be awarded a Certificate in Graphics Design from SCC. ¶

# CURRENT CTE INITIATIVES

## Pathways to Prosperity


- Follow up to the Harvard Graduate School report in 2011
- Intentional effort to align educational offerings with regional economic development needs
- Seeks high levels of business/industry involvement
- Creates pathways and systems that can be replicated
  - Combination of technical and academic content
  - Catalyst for new CTE courses
  - Includes certifications/credentials
  - Partnership with Community College

Increased involvement of business/industry

### STEM East

- Public-private partnership addressing the education needs for STEM careers and economic development

### Lee County Caterpillar Apprenticeship

- Partnership between business, post-secondary and secondary education, and NC Department of Labor
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## Students that are Career, College and Community Ready

- Commitment to current, relevant curriculum
- Stackable credentials that ensure success at the next level
- High levels of academic integration and support for rigorous math and English/Language Arts Standards
- Work-based learning experiences that reinforce soft skills necessary for success



# MOVING FORWARD...

- Expand partnership with the NC Department of Labor for greater participation in apprenticeship programs
  - Continue Career Development work for students
  - Incentives for business and industry to participate in student internships and teacher externships
  - Increased support of CTE Student Organizations
  - Recognition of students that are Future Ready Core graduates with a CTE Concentration
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